

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

- 1 1. (original) A electroosmotic pump comprising:
 - 2 a. at least one porous structure for pumping fluid therethrough, the porous structure
 - 3 having a first side and a second side and having a first continuous layer of
 - 4 electrically conductive porous material having an appropriate first thickness
 - 5 disposed on the first side and a second continuous layer of electrically conductive
 - 6 porous material having a second thickness disposed on the second side, wherein at
 - 7 least a portion of the porous structure is configured to channel flow therethrough;
 - 8 and
 - 9 b. means for providing electrical voltage to the first layer and the second layer to
 - 10 produce an electrical field therebetween, wherein the means for providing is
 - 11 coupled to the first layer and the second layer.

- 1 2. (original) The electroosmotic pump according to claim 1 further comprising means for
- 2 generating power sufficient to pump fluid through the porous structure at a desired rate,
- 3 wherein the means for generating is coupled to the means for providing.

- 1 3. (original) The electroosmotic pump according to claim 1 wherein the porous structure
- 2 includes a plurality of fluid channels extending between the first side and the second side.

- 1 4. (original) The electroosmotic pump according to claim 1 wherein the first side and the
- 2 second side are roughened.

- 1 5. (original) The electroosmotic pump according to claim 3 wherein the plurality of fluid
- 2 channels are in a straight parallel configuration.

- 1 6. (original) The electroosmotic pump according to claim 3 wherein the plurality of fluid
- 2 channels are in a non-parallel configuration.

- 1 7. (original) The electroosmotic pump according to claim 3 wherein at least two of the
2 plurality of fluid channels are cross connected.
- 1 8. (original) The electroosmotic pump according to claim 1 wherein the electrically
2 conductive porous material is disposed as a thin film electrode.
- 1 9. (original) The electroosmotic pump according to claim 1 wherein the electrically
2 conductive porous material is disposed as a screen mesh having an appropriate
3 electrically conductivity.
- 1 10. (original) The electroosmotic pump according to claim 1 wherein the electrically
2 conductive porous material includes a plurality of conductive beads having a first
3 diameter in contact with one another to pass electrical current.
- 1 11. (original) The electroosmotic pump according to claim 10 wherein at least one of the
2 plurality of beads has a second diameter larger than the first diameter.
- 1 12. (original) The electroosmotic pump according to claim 1 wherein a predetermined portion
2 of the continuous layer of electrically conductive porous material has a third thickness.
- 1 13. (original) The electroosmotic pump according to claim 12 wherein the predetermined
2 portion of the continuous layer is disposed on the surface of the porous structure in one or
3 more desired patterns.
- 1 14. (original) The electroosmotic pump according to claim 13 wherein at least one of the
2 desired patterns further comprises a circular shape.
- 1 15. (original) The electroosmotic pump according to claim 13 wherein at least one of the
2 desired patterns further comprises a cross-hatched shape.
- 1 16. (original) The electroosmotic pump according to claim 13 wherein at least one of the
2 desired patterns further comprises a plurality of parallel lines.

- 1 17. (original) The electroosmotic pump according to claim 1 wherein at least a portion of an
2 outer region of the porous structure is made of fused non-porous glass.
- 1 18. (original) The electroosmotic pump according to claim 1 wherein the first thickness is
2 within the range between and including 200 Angstroms and 10,000 Angstroms.
- 1 19. (original) The electroosmotic pump according to claim 1 wherein the second thickness is
2 within the range between and including 200 Angstroms and 10,000 Angstroms.
- 1 20. (original) The electroosmotic pump according to claim 1 wherein the electrically
2 conductive porous material is Platinum.
- 1 21. (original) The electroosmotic pump according to claim 1 wherein the electrically
2 conductive porous material is Palladium.
- 1 22. (original) The electroosmotic pump according to claim 1 wherein the electrically
2 conductive porous material is Tungsten.
- 1 23. (original) The electroosmotic pump according to claim 1 wherein the electrically
2 conductive porous material is Copper.
- 1 24. (original) The electroosmotic pump according to claim 1 wherein the electrically
2 conductive porous material is Nickel.
- 1 25. (original) The electroosmotic pump according to claim 1 further comprising an adhesion
2 material disposed in between the electrically conductive porous material and the porous
3 structure.
- 1 26. (original) The electroosmotic pump according to claim 1 wherein the first layer and the
2 second layer is made of the same electrically conductive porous material.
- 1 27. (original) The electroosmotic pump according to claim 1 wherein the first layer and the
2 second layer is made of different electrically conductive porous materials.

- 1 28. (original) An electroosmotic porous structure adapted to pump fluid therethrough, the
2 porous structure comprising a first side and a second side, the porous structure having a
3 plurality of fluid channels therethrough, the first side having a first continuous layer of
4 electrically conductive porous material deposited thereon and the second side having a
5 second continuous layer of electrically conductive porous material deposited thereon, the
6 first layer and the second layer coupled to a power source, wherein the power source
7 supplies a voltage differential between the first layer and the second layer to drive fluid
8 through the porous structure at a desired flow rate.
- 1 29. (original) The electroosmotic porous structure according to claim 28 wherein the plurality
2 of fluid channels extend from the first side to the second side in a straight parallel
3 configuration.
- 1 30. (original) The electroosmotic porous structure according to claim 28 wherein the plurality
2 of fluid channels extend from the first side to the second side in a non-parallel
3 configuration.
- 1 31. (original) The electroosmotic porous structure according to claim 28 wherein at least two
2 of the plurality of fluid channels are cross connected.
- 1 32. (original) The electroosmotic porous structure according to claim 28 wherein the
2 electrically conductive porous material is a thin film electrode.
- 1 33. (original) The electroosmotic porous structure according to claim 28 wherein the first
2 layer of electrically conductive porous material is a screen mesh.
- 1 34. (original) The electroosmotic porous structure according to claim 28 wherein the
2 electrically conductive porous material further comprises a plurality of conductive beads
3 having a first diameter in contact with one another to pass electrical current.
- 1 35. (original) The electroosmotic porous structure according to claim 34 wherein at least one
2 of the plurality of beads has a second diameter larger than the first diameter.

- 1 36. (original) The electroosmotic porous structure according to claim 28 wherein a
2 predetermined portion of the continuous layer of electrically conductive porous material
 has a third thickness.
- 1 37. (original) The electroosmotic porous structure according to claim 36 wherein the
2 predetermined portion of the continuous layer is disposed on the surface of the porous
3 structure in one or more desired patterns.
- 1 38. (original) The electroosmotic porous structure according to claim 28 wherein at least a
2 portion of an outer region of the porous structure is made of fused non-porous glass.
- 1 39. (original) The electroosmotic porous structure according to claim 28 wherein the
2 continuous layer has a thickness within the range between and including 200 Angstroms
3 and 10,000 Angstroms.
- 1 40. (original) The electroosmotic porous structure according to claim 28 wherein the
2 electrically conductive porous material is Platinum.
- 1 41. (original) The electroosmotic porous structure according to claim 28 wherein the
2 electrically conductive porous material is Palladium.
- 1 42. (original) The electroosmotic porous structure according to claim 28 wherein the
2 electrically conductive porous material is Tungsten.
- 1 43. (original) The electroosmotic porous structure according to claim 28 wherein the
2 electrically conductive porous material is Nickel.
- 1 44. (original) The electroosmotic porous structure according to claim 28 wherein the
2 electrically conductive porous material is Copper.

- 1 45. (original) The electroosmotic porous structure according to claim 28 further comprising
2 an adhesion material disposed in between the electrically conductive porous material and
3 the porous structure.
- 1 46. (withdrawn) A method of manufacturing an electroosmotic pump comprising the steps of:
2 a. forming at least one porous structure having a first side and a second side and a
3 plurality of fluid channels therethrough;
4 b. depositing a first continuous layer of electrically conductive porous material of
5 appropriate first thickness to the first side adapted to pass fluid through at least a
6 portion of the portion of the first layer; and
7 c. depositing a second continuous layer of electrically conductive porous material of
8 appropriate second thickness to the second side adapted to pass fluid through at
9 least a portion of the second layer.
- 1 47. (withdrawn) The method according to claim 46 wherein the plurality of fluid channels
2 extend from the first side to the second side in a straight parallel configuration.
- 1 48. (withdrawn) The method according to claim 46 wherein the plurality of fluid channels
2 extend from the first side to the second side in a non-parallel configuration.
- 1 49. (withdrawn) The method according to claim 46 further comprising the steps of:
2 a. coupling a power source to the first continuous layer and the second continuous
3 layer; and
4 b. applying an appropriate amount of voltage to generate a substantially uniform
5 electric field across the at least one porous structure.
- 1 50. (withdrawn) The method according to claim 49 wherein the power source is coupled to
2 the first and second continuous layers via a pair of wires.
- 1 51. (withdrawn) The method according to claim 46 wherein the layer of electrically
2 conductive porous material is a thin film.
- 1 52. (withdrawn) The method according to claim 46 wherein the electrically conductive

- 1 porous material is a screen mesh.
- 1 53. (withdrawn) The method according to claim 52 further comprising the step of
2 mechanically clamping the screen mesh to the porous structure.
- 1 54. (withdrawn) The method according to claim 46 wherein the layer of electrically
2 conductive porous material includes a plurality of conductive beads in contact with one
3 another.
- 1 55. (withdrawn) The method according to claim 46 wherein a predetermined portion of the
2 layer of electrically conductive porous material has a third thickness.
- 1 56. (withdrawn) The method according to claim 46 wherein at least a portion of an outer
2 region of the porous structure is made of fused non-porous glass.
- 1 57. (withdrawn) The method according to claim 46 wherein the first thickness is within the
2 range between and including 200 Angstroms and 10,000 Angstroms.
- 1 58. (withdrawn) The method according to claim 46 wherein the second thickness is within
2 the range between and including 200 Angstroms and 10,000 Angstroms.
- 1 59. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is Platinum.
- 1 60. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is Copper.
- 1 61. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is Palladium.
- 1 62. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is Tungsten.

- 1 63. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is Nickel.
- 1 64. (withdrawn) The method according to claim 46 further comprising the step of depositing
2 an adhesion material to a surface of the electrically conductive porous material.
- 1 65. (withdrawn) The method according to claim 46 further comprising an adhesion material
2 disposed in between the electrically conductive porous material and the second side of the
3 porous structure.
- 1 66. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is applied by an evaporation process.
- 1 67. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is applied by a vapor deposition process.
- 1 68. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is applied by a screen printing process.
- 1 69. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is applied by a spraying process.
- 1 70. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is applied by a sputtering process.
- 1 71. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is applied by a dispensing process.
- 1 72. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is applied by a dipping process.
- 1 73. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is applied by a spinning process.

- 1 74. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is applied as a conductive ink.
- 1 75. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is applied by a patterning process.
- 1 76. (withdrawn) The method according to claim 46 wherein the electrically conductive
2 porous material is applied by a shadow masking process.